

REMARKS

Applicant and the undersigned would like to thank the Examiner for his efforts in the examination of this application.

I. Rejection of Claims 5, 6, 11, 14, 17, 18, 22-24, 28, 29, 34-36, 41-44, 47, and 48 under 35 USC 103(a)

The Examiner has rejected Claims 5, 6, 11, 14, 17, 18, 22-24, 28, 29, 34-36, 41-44, 47, and 48 as being unpatentable over L'Esperance in combination with Bille et al. '586.

This rejection is respectfully traversed. Claims 5, 6, 17, 22-24, 28, 29, 34-36, and 47 all recite the step of spacing two or more laser shots apart, in distance and/or in time, to avoid substantial interference between a plume of ablated material and a subsequent laser shot. Claim 11, 14, and 41 recite the step of spacing apart a subsequent pulse from the ablated area of a previous pulse.

The Examiner is requested to note col. 9, lines 22-45 of Bille '586, wherein it is taught that the ultrashort duration (10 psec) of the laser shots effectively eliminates the plume problem: "Specifically, because emissions 10 have such a short duration, any interaction they might have had with debris that is dispelled from the tissue during photoablation is effectively avoided. . . . The shorter duration emissions in the quasi-continuous beam, however, allow them to modify the tissue before the debris is ejected from the site." In addition, Bille '586 teaches that "the longer pulses of other presently used lasers are not so efficient."

Therefore, Bille '586 does not teach the physical spreading of the shot pattern in order to eliminate the plume effect. In fact, Bille '586 teaches that with ultrashort pulses the plume effect is negligible.

In addition, Bille '586 also teaches away from the present invention at col. 10, lines 13-15: "the Excimer laser leaves irregularities which present depth variations in surface **48** that are on the order of 0.5 microns. . . . It has been determined that craters **50** of this size cause hazy vision for a patient." Rather, Bille '586 teach the use of wavelengths of 526 (in the visible range), and 1053 and 2940 nm (in the infrared), the latter two causing heating, which is believed to cause the need for ultrashort pulses. Therefore, it is believed improper to combine Bille '586 with L'Esperance, who does teach the use of an excimer laser. In addition, as previously pointed out, L'Esperance teaches away from spaced-apart pulses by disclosing a rectilineal or spiral course of scan.

Claim 11 has been amended to more particularly point out a distinction from Bille '586 in the preferred use of an excimer laser in the present invention by incorporating the language of now-canceled Claim 9 therein.

Thus Claims 5, 6, 11, 17, 22-24, 28, 29, 34-36, 41, and 47 are believed to patentably define over the cited art. Claim 14, dependent from Claim 11, Claim 18, dependent from Claim 17, Claims 42-44, dependent from Claim 41, and Claim 48, dependent from Claim 47, are also thereby believed to patentably define over the cited art.

II. Rejection of Claims 1-8, 11, 12, 14-29, and 31-48 under 35 USC 103(a)

The Examiner has rejected Claims 1-8, 11, 12, 14-29, and 31-48 under 35 USC 103(a) as being unpatentable over Warner et al. in combination with Bille '586.

This rejection is respectfully traversed. Claims 1-6, 15, 17, 19-29, 31-36, and 47 all recite the step of spacing two or more laser shots apart, in distance and/or in time, to avoid substantial interference between a plume of ablated material and a subsequent laser shot. Claims 7, 11, 14, 37, 41, and 45 recite the step of spacing apart a subsequent pulse from the ablated area of a previous pulse.

As stated in the previously filed Response, Warner, at column 4, lines 38-42, states that the "laser spot size is controlled by means **27, 29** to be a circle centered on the optical axis (beam axis **25'**), and the diameter of the circle is caused to vary in the course of a predetermined ablation-producing exposure." Thus the laser spot remains fixed about the optical axis, and the diameter is changed over the exposure.

Again, Bille '586 teaches that the ultrashort duration (10 psec) of the laser shots effectively eliminates the plume problem and that "the longer pulses of other presently used lasers are not so efficient."

Therefore, Bille '586 does not teach the physical spreading of the shot pattern in order to eliminate the plume effect. In fact, Bille '586 teaches that with ultrashort pulses the plume effect is negligible.

In addition, Bille '586 also teaches away from the present invention at col. 10, lines 13-15: "the Excimer laser leaves irregularities which present depth variations in surface **48** that are on the order of 0.5 microns. . . . It has been determined that craters **50** of this size cause

hazy vision for a patient." Rather, Bille '586 teach the use of wavelengths of 526 (in the visible range), and 1053 and 2940 nm (in the infrared), the latter two causing heating, which is believed to cause the need for ultrashort pulses. Therefore, it is believed improper to combine Bille '586 with Warner, who does teach the use of an excimer laser.

Claim 11 has been amended to more particularly point out a distinction from Bille '586 in the preferred use of an excimer laser in the present invention by incorporating the language of now-canceled Claim 9 thereinto.

Thus Claims 1-7, 11, 14, 15, 17, 19-29, 31-37, 41, 45, and 47 are believed to patentably define over the cited art. Claim 8, dependent from Claim 7, Claim 12, dependent from Claim 11, Claim 14, dependent from Claim 11, Claim 16, dependent from Claim 15, Claim 18, dependent from Claim 17, Claim 38, dependent from Claim 37, Claim 39, dependent from Claim 35, Claim 40, dependent from Claim 36, Claims 42-44, dependent from Claim 41, Claim 46, dependent from Claim 45, and Claim 48, dependent from Claim 47, are also thereby believed to patentably define over the cited art.

III. Terminal Disclaimer

The Examiner is incorrect in stating that the "person signing does not have power of attorney". A Power of Attorney and Revocation of Previous Powers has been submitted on December 21, 2000. Another copy is enclosed herewith. The Examiner is therefore respectfully requested to recognize this document and admit the previously filed Terminal Disclaimer.

V. Information Disclosure Statements


A copy of the IDS pages 5-9 is enclosed herewith, as requested by the Examiner.

CONCLUSIONS

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "**Version With Markings to Show Changes Made.**"

Applicant respectfully submits that the above amendments place this application in a condition for allowance, and passage to issue is respectfully solicited. The Applicant and the undersigned would like to again thank the Examiner for his efforts in the examination of this application and for reconsideration of the claims as amended in light of the arguments presented. If the further prosecution of the application can be facilitated through telephone interview between the Examiner and the undersigned, the Examiner is requested to telephone the undersigned at the Examiner's convenience.

Respectfully submitted,



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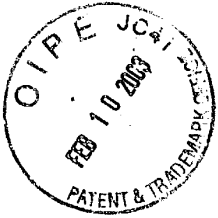
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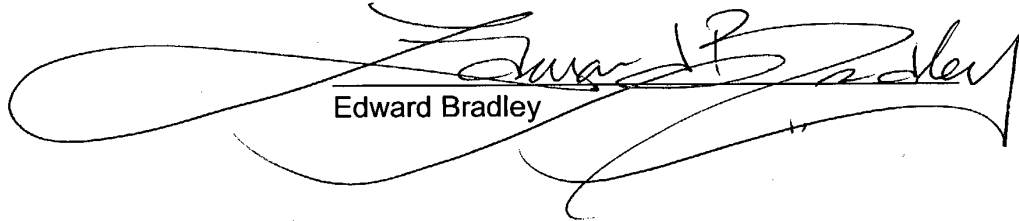
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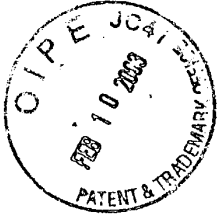
I hereby certify that the foregoing is being deposited with the United States Postal Service as first class mail in an envelope addressed to the Commissioner of Patents, Washington D.C. 20231, this 4th day of February, 2003.


Edward Bradley

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please cancel Claims 9, 10, and 13 and amend Claims 7 and 11 as follows:

7. **(twice amended)** A method for correcting vision comprising:

folding a flap of corneal tissue of an eye aside, exposing a surface of the cornea under the flap;

selecting a pattern for the placement of laser beam pulses on the exposed surface of the cornea;

the selected pattern comprising at least three points, the points being spaced apart from each other;

applying a first excimer laser pulse to the exposed corneal surface at the first point in the pattern, applying a second excimer laser pulse immediately subsequent to the first laser pulse to the exposed corneal surface at the second point in the pattern, and applying a third excimer laser pulse immediately subsequent to the second laser pulse to the exposed corneal surface at the third point in the pattern;

the laser pulses ablating an area of tissue from the exposed surface of the cornea;

the ablated area of tissue from the second pulse being spaced apart from the ablated area of tissue from the first pulse; and[,]

the area of ablated tissue from the third pulse being spaced apart from the area of ablated tissue of the second pulse.

11. **(twice amended)** A method for correcting vision comprising:

selecting a pattern for the placement of laser beam pulses on an eye;
the selected pattern comprising at least three points; the points being spaced apart from each other;

applying a first excimer laser pulse to the corneal surface of the eye at the first point in the pattern, applying a second excimer laser pulse immediately subsequent to the first laser pulse to the corneal surface at the second point in the pattern, and applying a third excimer laser pulse immediately subsequent to the second laser pulse to the corneal surface at the third point in the pattern;

the laser pulses ablating an area of tissue from the cornea of the eye;

the ablated area of tissue from the second pulse being spaced apart from the ablated area of tissue from the first pulse; and[,]

the area of ablated tissue from the third pulse being spaced apart from the area of ablated tissue of the second pulse.